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-2-

application is as a bed topping material which is intended to keep material within a bed confined with limited ability to be entrained in a gas flow or to be caused to move around by such a flow. Such entrainment or abrasion typically causes significant losses to the material in the bed.

Ceramic packing elements can be produced by an extrusion or a [0003] dry-pressing process and hence have an essentially uniform cross-section along one axial direction which provides an axis of symmetry for the element. Several such shapes have been described in the art ranging from the very simple to the complex. All are based on an essentially cylindrical shape and differ basically in the internal structure within the cylindrical shape. The simplest structure is a basic cylinder with no internal structure at all. This type of structure is often called a Raschig ring and has been known for many years. At the other end of the complexity scale are the structures described in US Design Patent 455,029 and US Pat. No. 6,007,915. Between the extremes there are simple wagonwheel shapes such as are described in US Pat. Nos. 3,907,710 and 4,510,263. Others show deformed cylindrical structures, such as those described in US Pat No. 5,304,423. BE 481 212 discloses a packing element for use in heat exchangers, distillation towers, catalyst supports, and the like having four through passages and an indented exterior surface. DE 24 25 058 discloses a ceramic filling material with a cylindrical or hexagonal shape and multiple through passages. US Pat. No. 2,172,714 discloses a stackable block for regenerators.

[0004] For certain applications, such as bed limiters, the pressure drop is less important since the thickness of the bed limiter layer is relatively small. It is far more important that the packing elements do not nest together and still allow free passage of gases while being heavier that the elements comprising the bed on which the packing elements rest and whose extent is thereby limited.

SUMMARY OF THE INVENTION

[0005] In accordance with one aspect of the present invention, a ceramic packing element is provided. The element has an essentially uniform cross-section along an axis passing through a center of the element and about which the element is symmetrical defining a length of the element. A ratio of a width